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1. A method for generating an improved image signal when estimating the motion of image sequences, in particular a prediction signal for video images using motion-compensating prediction, with motion vectors, which, for each picture block of a current image, indicate the position of the picture block used for the prediction with respect to a chronologically preceding reference image, being formed for picture blocks, comprising the following steps:

- in a first search step, a motion vector is determined with pel accuracy;
- starting out from the motion vector, in a second search step, an improved motion vector is ascertained with sub-pel accuracy by aliasing-reducing interpolation filtering, using a digital filter, the resolution being selected to be higher than that corresponding to the resolution of the pixel raster in the first search step, and more neighboring pixels being utilized for the interpolation than in the case of a bilinear interpolation;
- in a third search step, starting from the motion vector determined with sub-pel accuracy, a further improved motion vector is determined by a further interpolation filtering using the digital filter, the resolution being increased once more in comparison with the second search step, and the interpolation being carried out on the basis of the pixel raster, with the resolution in the second search step.

2. The method as recited in Claim 1, characterized in that, for the interpolation filtering in the second search step, an FIR filter is used having the filter coefficients  $CO1 = 161/256$ ,  $CO2 = -43/256$ ,  $CO3 = 23/256$ ,  $CO4 = -8/256$ .

3. The method as recited in Claim 1 or 2, characterized in that, for the interpolation filtering in the third search step, an FIR filter is used having the FIR filter coefficients  $C01' = 1/2$ ,  $C02' = 0$ ,  $C03' = 0$ ,  $C04' = 0$ .

4. The method as recited in one of the Claims 1 through 3, characterized in that, to predict video objects (VO), the filter coefficients of the digital filter/FIR filter are separately conditioned for each video object, and inserted into a transmission bit stream at the beginning of transmission of the object in question.

5. The method as recited in one of the Claims 1 through 4, characterized in that, for the encoding of a motion vector, in particular for a transmission, the range of values of the motion vector differences to be coded is adapted to an increased resolution.

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